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P2.01: REPRODUCIBILITY OF CAROTID-TO-FEMORAL PULSE WAVE VELOCITY MEASUREMENT: QUANTITATIVE EFFECTS OF DISTANCE AND TRANSIT TIME ASSESSMENT

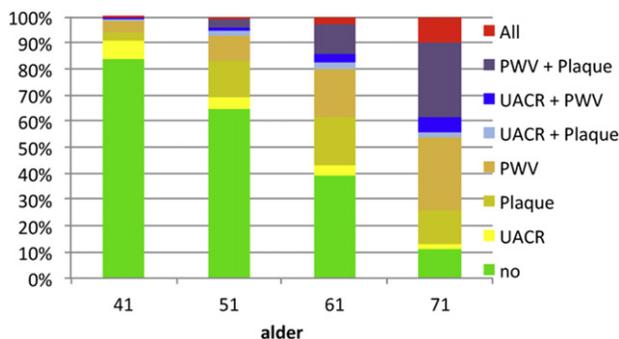
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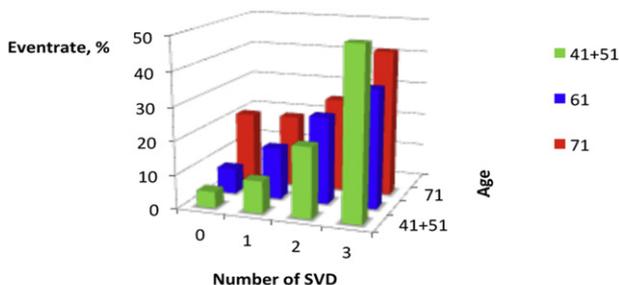
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that the advantage of combined markers for SVD is doubtful in subjects aged 41 years or SCORE<1% due to low prevalence as well as in subjects aged 71 years or SCORE≥10% due very high prevalence and low additive predictive value.



Prevalence of SVD in age groups.

Share of SVD in age groups. Illustrating number of SVD increasing with age.



Eventrate

Proportion of events, CVE, in each age group and grouped by number of SVD.

P1.44

NEURAL BARORECEPTOR SENSITIVITY IN SUBJECTS WITH METABOLIC SYNDROME

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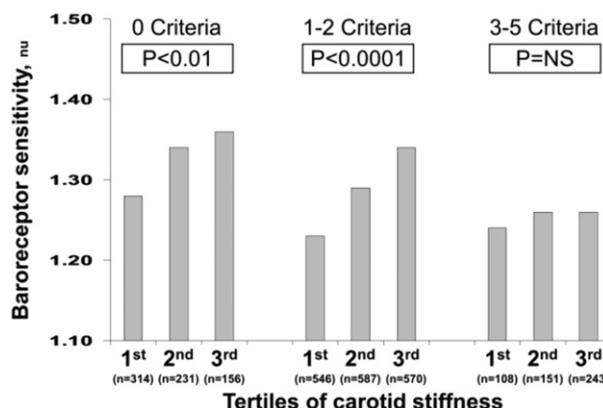
One of the most common non-invasive techniques to study the baroreflex is the spectral analysis of blood pressure (BP) and heart rate variability. The recent use of carotid distension rate instead of BP has permitted to study the neural path of the baroreflex after fully controlling for the vascular component. We previously discovered a new compensatory mechanism, reporting that the neural baroreceptor sensitivity (BRS) is higher in subjects with high carotid stiffness. We aimed to test whether this new compensatory mechanism is maintained in subjects with metabolic syndrome (MS).

Methods: From the PPS3 study, a large epidemiological survey of working people of age 50-75, were selected 2835 individuals non-diabetic, non-smokers, untreated by either anti-hypertensive or lipid-lowering drugs, and free from overt or familiarity for cardiovascular disease. A total of 701, 1673 and 461 subjects with respectively 0, 1-2 and 3-5 criteria for MS were studied.

Results: Neural BRS decreases significantly from subjects with 0 (median 1.33, IQ1.15-1.49 normalized units) to those with 1-2 (median 1.30, IQ1.10-1.47) and 3-5 criteria for MS (median 1.26, IQ1.08-1.43). Neural BRS

was not significantly increased in subjects with both high carotid stiffness and 3-5 criteria for MS (Figure 1), suggesting the presence of neuropathy in subjects with MS.

Conclusions: Neural BRS is reduced in subjects with MS. The compensatory, carotid stiffness-dependent, increase of neural BRS is abolished in subjects with MS.



P2 – Methods

P2.01

REPRODUCIBILITY OF CAROTID-TO-FEMORAL PULSE WAVE VELOCITY MEASUREMENT: QUANTITATIVE EFFECTS OF DISTANCE AND TRANSIT TIME ASSESSMENT

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Background: Carotid-femoral pulse wave velocity (PWV) is calculated on the basis of body surface distance (determined by either direct or indirect paths) and the corresponding transit time. The impact of distance vs time measurement on PWV reproducibility has not been quantified.

Methods: In 34 volunteers (age 47±19 years), carotid-femoral distance and transit time were measured twice by each of 2 trained observers, 2 hours apart, using a tape and a caliper. Two commonly used estimates of the travelled distance were calculated, namely "subtracted" (suprasternal notch to femoral artery minus suprasternal notch to carotid artery) and "direct" distance (carotid to femoral artery, multiplied by 0.8). Transit time was measured by high-fidelity tonometry (SphygmoCor, average of 3 readings for each of the 2 sessions). Variability was expressed as interobserver coefficient of variation (CV) and intra-class correlation (ICC).

Results: The CV was lowest for transit time (3.0%; interobserver difference ± SD, 0.0±1.8 ms), highest for subtracted distance (6.8%; 3.1±29 mm), and intermediate for direct distance (4.2%; 12.5±20 mm). The resulting interobserver differences in PWV were +0.0±0.2 m/s, +0.0±0.5 m/s, and +0.2±0.3 m/s, respectively. ICC was 0.98 for transit time (95% confidence interval [CI], 0.97-0.99), 0.73 for subtracted distance (95% CI, 0.53-0.86), and 0.81 for direct distance (95% CI, 0.66-0.90).

Conclusion. Interobserver variability of aortic PWV depends more on the measurement of body surface distance than on transit time. Estimates of the distance based on direct paths may generate a lower interobserver variability than those resulting from the combination of 2 paths ("subtracted" distance).

P2.02

COMPARISON OF CENTRAL BLOOD PRESSURE MEASURED BY APPLANATION TONOMOMETRY AND ECHOTRACKING

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Background: Some studies have shown the interest of measuring central blood pressure (CBP), which can be lowered differently by drugs at same systemic BP response. CBP is usually measured noninvasively by the Sphygmocor® device using applanation tonometry on radial artery.